

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF MD 351 (BALLENGER CREEK PIKE) AND HANOVER DRIVE IN FREDERICK COUNTY. CROSSWALKS ACROSS THE SOUTH AND WEST LEGS (WITH LED COUNTDOWN PEDESTRIAN SIGNALS AND ACCESSIBLE PEDESTRIAN PUSHBUTTONS) ARE PROPOSED. THE EXISTING SCHOOL ZONE HIB WILL BE RELOCATED 200 FT. NORTH OF THE EXISTING LOCATION AND INTEGRATED INTO THIS TRAFFIC SIGNAL. MD 351 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA FOUR-PHASE, FULL TRAFFIC-ACTUATED MODE WITH CONCURRENT MAINLINE PEDESTRIAN PHASE AND AN ALTERNATE SIDE STREET PEDESTRIAN PHASE.

CONTROLLER REQUIREMENTS

INSTALL A NEMA SIZE #6 BASE MOUNTED CABINET. THE SHA SIGNAL SHOP WILL INSTALL A NEW EIGHT-PHASE FULLY ACTUATED TRAFFIC SIGNAL CONTROLLER WITH ASSOCIATED HARNESSSES, ONE (1) 2-WIRE CENTRAL CONTROL UNIT, ONE (1) VIDEO INTERFACE EQUIPMENT, AND ONE (1) 4 CHANNEL LOOP DETECTOR AMPLIFIER WITHIN THE CABINET.

PHONE DROP

THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT 410-787-7635 TO ARRANGE FOR THE PHONE DROP LINE INSTALLATION. THE CONTRACTOR IS TO NOTIFY MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND PHONE NUMBER.

THE CONTACT PERSONS FOR DISTRICT #7 ARE AS FOLLOWS:

Mr. John Concannon
Assistant District Engineer - Traffic
Phone: 301-624-8104

Ms. Andrea Abend
Assistant District Engineer - Utility
Phone: 301-624-8115

Mr. Raymond Johnson
Assistant District Engineer - Maintenance
Phone: 301-624-8105

Mr. Richard L. Daff Sr.
Chief, Traffic Operations Division
Phone: 410-787-7630

Mr. Edward Rodenhizer
SHA Signal Shop
Phone: 410-787-7650

The Power Company Representative is:
Allegheny Power
10435 Downsville Pike
Hagerstown, MD 21740
Phone: 1-800-255-3443

EQUIPMENT LIST 'A'

EQUIPMENT TO BE FURNISHED BY THE SHA.

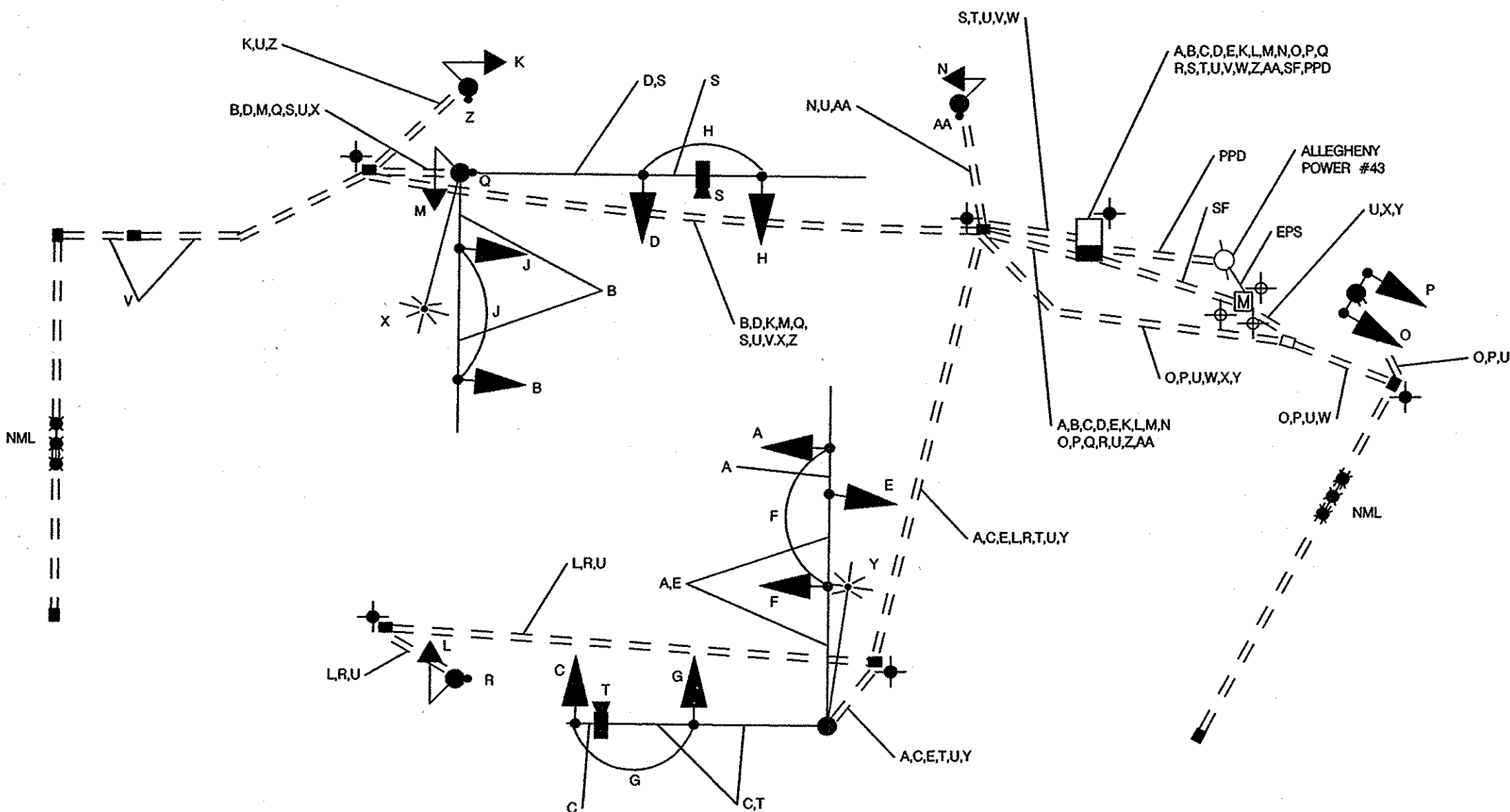
ITEM NO	QUANTITY	DESCRIPTION
9016	1 EA	UPDATED] 4 CHANNEL DETECTOR AMPLIFIER
9044	1 EA	UPDATED] CONTROLLER CABINET, SIZE 6
9086	1 EA	UPDATED] VIDEO DETECTION INTERFACE EQUIPMENT: 1-4 CAMERAS
9570	94 SF	UPDATED] SHEET ALUMINUM GROUND MOUNTED SIGN: 2 EA - W3-3 (36 IN. x 36 IN.) FY + D95-25 (24 IN. x 24 IN.) 6 EA - SI-1 (36 IN. x 36 IN.) 6 EA - M6-2(MOD) FYG (21 IN. x 15 IN.)
9571	25 SF	UPDATED] SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN: 2 EA - R10-30 (9 IN. x 15 IN.) *PUSH BUTTON TO CROSS BALLENGER CREEK PK* 2 EA - R10-30 (9 IN. x 15 IN.) *PUSH BUTTON TO CROSS HANOVER DRIVE* 1 EA - D3-2 (96 IN. x 16 IN.) *BALLENGER CREEK PK* (DUAL FACED) 1 EA - D3-2 (96 IN. x 16 IN.) *HANOVER DRIVE* (DUAL FACED)

EQUIPMENT LIST 'B'

EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

ITEM NO	QUANTITY	DESCRIPTION
1001	3 EA	MAINTENANCE OF TRAFFIC
2002	6 CY	TEST PIT EXCAVATION
5001	100 LF	5 INCH HEAT APPLIED WHITE OR YELLOW PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5002	40 LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5003	1 EA	REMOVAL OF EXISTING PERMANENT PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS
5004	450 LF	12 INCH HEAT APPLIED WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
5005	95 LF	24 INCH HEAT APPLIED WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
5007	1 EA	HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROWS
6002	75 LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6003	950 SF	4 INCH CONCRETE SIDEWALK
6004	115 SF	DETECTABLE WARNING SURFACE FOR CURB RAMPS
8001	27 EA	12 INCH LED SIGNAL HEAD SECTION
8002	1 EA	2 WIRE CENTRAL CONTROL UNIT
8007	2 EA	ANY SIZE LIGHTING ARM ON SIGNAL POLE WITH 250 WATT HPS LAMP AND LUMINAIRE
8008	4 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON
8009	3 EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8012	1 EA	INSTALL BREAKAWAY PEDESTAL POLE (ANY SIZE)
8014	4 EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8021	2 EA	NONINVASIVE DETECTOR (ANY LENGTH) LEAD IN CABLE UP TO 1000 FT
8022	1 EA	REMOVE AND DISPOSE OF TRAFFIC SIGNAL EQUIPMENT PER ASSIGNMENT
8023	1 EA	TWIN MAST ARM POLE & 50 FT/60 FT MAST ARMS ANY *T* DIMENSION
8025	1 EA	TWIN MAST ARM POLE & 50 FT/50 FT MAST ARMS ANY *T* DIMENSION
8027	2 EA	VIDEO DETECTION CAMERA AND CABLE UP TO 500 FT
8036	1015 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8037	390 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - BORED
8038	75 LF	WOOD SIGN SUPPORTS 4 X 6
8040	119 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN
8042	565 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8046	50 LF	ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG-THHN/THWN
8048	9 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8053	1 EA	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
8055	450 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
8057	750 LF	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)
8058	1100 LF	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 AWG)
8059	370 LF	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 AWG) TC
8065	1 EA	INSTALL CONTROLLER AND CABINET - BASE MOUNT

WIRING DIAGRAM



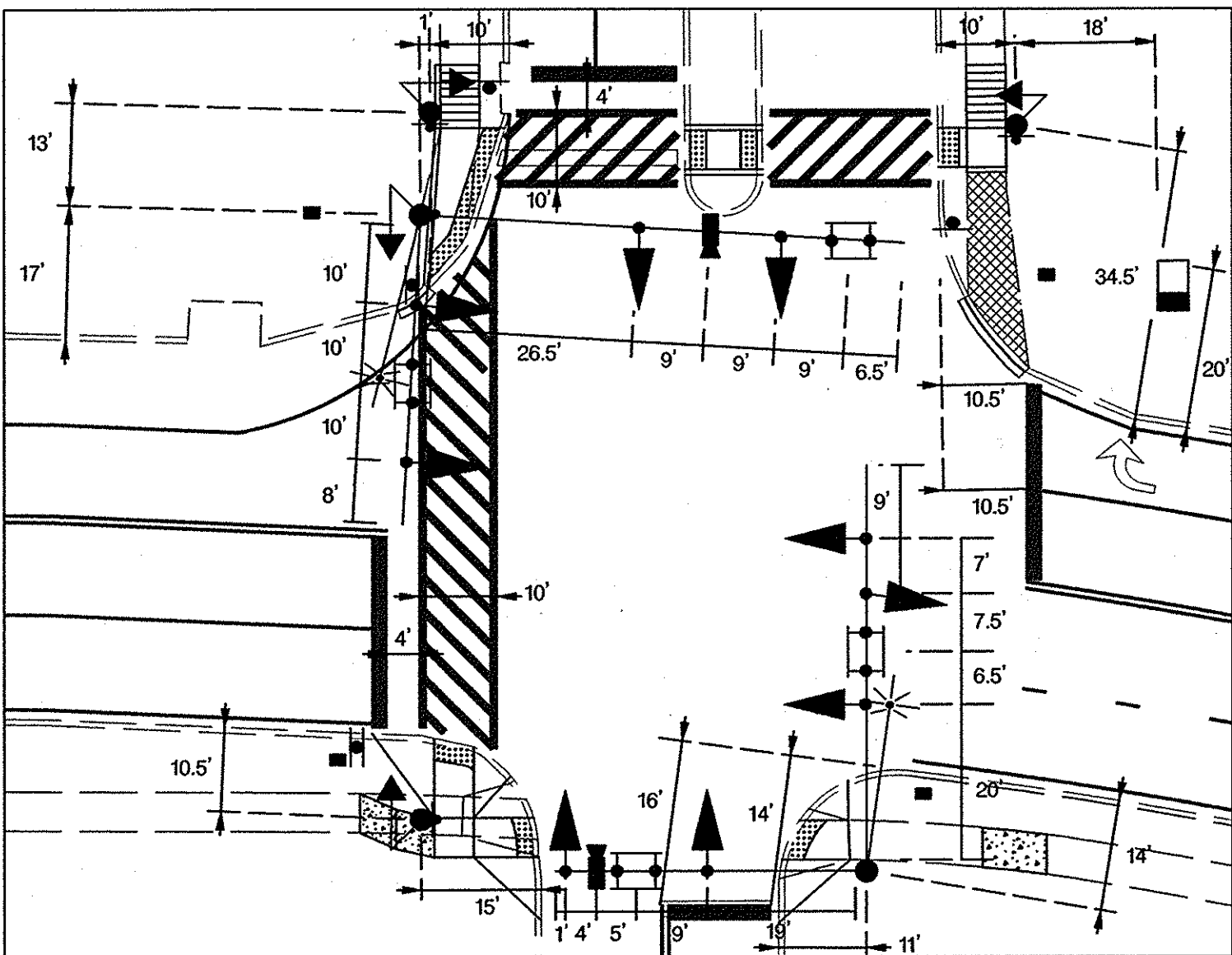
EQUIPMENT LIST 'C'

EQUIPMENT TO BE REMOVED AND RETURNED TO SHA.

ITEM NO QUANTITY DESCRIPTION

NONE - ALL REMOVED EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR

PROPOSED SIGNAL POLE, PEDESTAL POLE, CABINET, AND PAVEMENT MARKING LAYOUT



PHASE CHART

PHASE CHART	1	2	5	6	7	8	9	10	11	12	13	14	15
	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)
PHASE 2 & 6	G	G	G	G	G	R	R	R	R	W	W	DW	DW
PED CLEARANCE	G	G	G	G	G	R	R	R	R	FL/DW/FL/DW	DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	G	G	G	G	DW	DW	W	W
PED CLEARANCE	R	R	R	R	R	G	G	G	G	DW	DW	FL/DW/FL/DW	DW
4 & 8 ALT CHANGE	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

HIB PHASE CHART

HIB PHASE CHART	3	4
	(Y) (Y)	(Y) (Y)
NORMAL OPERATION	DARK	DARK
SPECIAL OPERATION	FL/Y	FL/Y



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 351 (BALLENGER CREEK PIKE)
AT HANOVER DRIVE

GENERAL INFORMATION

SCALE 1"=20'	DATE 6/2007	CONTRACT NO. AX1425185
DESIGNED BY MCG	COUNTY FREDERICK	
DRAWN BY MCG	LOGMILE 10035110.392	
CHECKED BY BAB/LTS	T.I.M.S. NO. 1358	
F.A.P. NO.	TOD NO.	
DRAWING NO. TS-4586-GI	SHEET NO. 2 OF 2	

PLOTTED: Monday, June 18, 2007 AT 03:54 PM
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BY: guilano



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